Complete Summary

GUIDELINE TITLE

Shoulder (acute & chronic).

BIBLIOGRAPHIC SOURCE(S)

Work Loss Data Institute. Shoulder (acute & chronic). Corpus Christi (TX): Work Loss Data Institute; 2006. 175 p. [76 references]

GUIDELINE STATUS

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug for which important revised regulatory information has been released.

On April 7, 2005, the U.S. Food and Drug Administration (FDA) asked manufacturers of non-prescription (over the counter [OTC]) non-steroidal anti-inflammatory drugs (NSAIDs) to revise their labeling to include more specific information about potential gastrointestinal (GI) and cardiovascular (CV) risks, and information to assist consumers in the safe use of the drugs. See the FDA Web site for more information.

Subsequently, on June 15, 2005, the FDA requested that sponsors of all NSAIDs make labeling changes to their products. FDA recommended proposed labeling for both the prescription and OTC NSAIDs and a medication guide for the entire class of prescription products. See the FDA Web site for more information.

COMPLETE SUMMARY CONTENT

IDENTIFYING INFORMATION AND AVAILABILITY
DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

Work-related shoulder disorders

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Orthopedic Surgery
Physical Medicine and Rehabilitation
Surgery

INTENDED USERS

Advanced Practice Nurses
Health Care Providers
Health Plans
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To offer evidence-based step-by-step decision protocols for the assessment and treatment of workers' compensation conditions

TARGET POPULATION

Workers with occupational shoulder disorders

INTERVENTIONS AND PRACTICES CONSIDERED

The following interventions/procedures were considered and recommended as indicated in the original guideline document:

1. Activity restrictions/work modifications
2. Acupuncture
3. Anterior scalene block

4. Arthrography
5. Cardiovascular functional testing
6. Chiropractic/manipulation
7. Continuous-flow cryotherapy
8. Deep friction massage
9. Diagnostic arthroscopy
10. Diagnostic ultrasound
11. Electrodiagnostic testing for thoracic outlet syndrome (TOS)
12. Exercises
13. Extracorporeal shock wave therapy (ESWT)
14. Impingement test
15. Low level laser therapy (LLLT)
16. Magnetic resonance imaging (MRI)
17. Nerve blocks
18. Physical therapy
19. Pulsed electromagnetic field
20. Radiography
21. Return to work (early mobilization)
22. Steroid injections
23. Surgery for impingement syndrome
24. Surgery for rotator cuff repair
25. Surgery for shoulder dislocation
26. Surgery for thoracic outlet syndrome
27. Therapeutic ultrasound

The following interventions/procedures are under study and are not specifically recommended:

1. Arthroplasty (shoulder)
2. Ergonomic interventions
3. Hydroplasty/hydrodilation
4. Manipulation under anesthesia
5. Massage
6. Postoperative pain pump
7. Surgery for adhesive capsulitis
8. Thermal capsulorrhaphy
9. Thermotherapy
10. Transcutaneous electrical neurostimulation (TENS)

The following interventions/procedures were considered, but are not recommended:

1. Adson's test (AT)
2. Biofeedback
3. Biopsychosocial rehabilitation
4. Bipolar interferential electrotherapy
5. Continuous-passive motion (CPM)
6. Costoclavicular maneuver (CCM)
7. Cutaneous laser treatment
8. Diathermy
9. Electrical stimulation
10. Elevated arm stress test

11. Immobilization
12. Mechanical traction
13. Osteochondral autologous transplantation (OATS)
14. Porcine small intestinal submucosal implants
15. Supraclavicular pressure
16. Surgery for acromioclavicular (AC) joint separation
17. Surgery for ruptured biceps tendon (except as indicated in the original guideline document)
18. Transdermal nitroglycerin

MAJOR OUTCOMES CONSIDERED

- Sensitivity, specificity, and accuracy of diagnostic tests
- Effectiveness of treatment in relieving pain and restoring normal function

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Ranking by quality within type of evidence:

a. High Quality
b. Medium Quality
c. Low Quality

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

The guideline developers reviewed published cost analyses.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary. The recommendations that follow are based on the previous version of the guideline.

Initial Diagnosis

- First visit: with Primary Care Physician MD/DO (100%)
- Initial evaluation should include:
    - Determine the type of trauma (e.g., direct trauma, fall, repetitive motion, twisting incident, etc.)
    - Test the range-of-motion of the joint (normal, mild restriction, severe restriction, or complete restriction).
    - An initial evaluation of the shoulder requires accurate diagnosis of shoulder injuries by careful inspection and palpation of the shoulder area. Although the shoulder is generally swollen, the injury is usually defined by direct tenderness over the injured area.
- Determine "degenerative changes" versus "acute trauma":
    - Degenerative changes (Go to Initial Conservative Treatment) Lesions of the rotator cuff are a continuum, from mild inflammation and degeneration to full avulsions. Studies of normal subjects document the universal presence of degenerative changes and conditions, including full avulsions without symptoms. Conservative treatment has results similar to surgical treatment but without surgical risks. Surgical outcomes are much better in younger patients with a

rotator cuff tear, than in older patients, who may be suffering from degenerative changes in the rotator cuff. Impingement syndrome, shoulder tendonitis, shoulder sprain, and subacromial bursitis are all closely related entities with the same etiology. They involve friction, abrasion, and inflammation of the rotator cuff and the long head of the biceps tendon with the subacromial arch (anterior lip of the acromion, coracoacromial ligament, and acromioclavicular joint). These conditions involve consequences of aging or repetitive use, or a combination thereof, such as:

- Impingement syndrome (age >40 years, weakness, cuff tenderness, painful range of motion [ROM], impingement sign, radiographic findings, night pain, history of catching, or pain with shoulder motion)
- Rotator cuff tendonitis (similar)
- Rotator cuff tear (only Types I and II, partial tear, age >40 yrs)
- Adhesive capsulitis, frozen shoulder (progressive pain and stiffness, diabetes or trauma, decreased passive ROM, normal x-rays, night pain)
- Tendonopathy
- Bicipital tendon disorders
- Bursitis

- Acute Trauma (Go directly to Aggressive Treatment)
  - Acute rotator cuff tear (type III, age <40 yrs)
  - Acromioclavicular (AC) joint strain or separation
    - Types I-III versus Types IV-VI (rare, surgery may be indicated)

- Rule out diagnoses (See other treatment parameters for each of these):
  - Referred neck pain (see the original guideline document for ICD-9 codes for this and other diagnoses)
  - Thoracic outlet syndrome, brachial plexus disorders
  - Fractures (treat clavicular fractures mostly nonoperatively)
  - Laceration
  - Glenohumeral shoulder joint dislocation
  - Arthritis

Mild/Moderate -- Initial Conservative Treatment (90% of cases)

- Also first visit (day 1):
  - Prescribe alteration of activity (home and work), no overhead work, stretching (gentle range-of-motion exercises), appropriate analgesia (i.e., acetaminophen) and/or anti-inflammatory (i.e., ibuprofen) [Benchmark cost: $14], back to work--modified duty: if condition caused by job, possible ergonomic evaluation of job

Official Disability Guidelines (ODG) Return-To-Work Pathways
Medical treatment (stage 1 or 2, impingement, no tear), modified work: 0 days Medical treatment (impingement, no tear), manual work: 7 days (See ODG Capabilities & Activity Modifications for Restricted Work under "Work" in the Procedure Summary of the original guideline document)

- Second visit (day 14 - about 2 weeks after first visit)
    - Document progress.
    - If not significantly improved, then prescribe physical therapy (gentle range-of-motion exercises plus exercises that strengthen the rotators and stabilize the scapula); should be started for home exercise training [Benchmark cost: $250]: Refer to Physical Therapist (50%) or Occupational Therapist (50%) for 3 visits per week for 2 weeks.
- Third visit (day 28 - about 1 month after first visit)
    - Document progress.
    - Further relaxation and pain control can be achieved by injecting an anesthetic under the acromion (laterally or anteriorly) into the shoulder joint.
    - Corticosteroid injection trial [Benchmark cost: $276]. Should be performed by musculoskeletally-trained physician. Sprains of the rotator cuff cause swelling within a closed space and add an element of chronic impingement which may be slow to resolve. By decreasing swelling, local infiltration of the rotator cuff with corticosteroids may quicken the resolution of this problem. Repeat corticosteroid injection may be necessary, but should not be done any sooner than every two weeks, up to a maximum of three injections. Injection should be avoided in patients under 30 years of age.
    - If prescribe therapy, then continue therapist, change from passive to active modality, up to 2 visits per week, teach home exercises.

ODG Return-To-Work Pathways

Medical treatment (impingement, no tear), manual overhead work: 28 days

Medical treatment, regular work if cause of disability: 42 days

Medical treatment, heavy manual work: 42 days

- Fourth visit (day 42 - about 6 weeks after first visit)
    - Refer for imaging.

Imaging (30% of cases)
[Benchmark cost: $370-$1,200]

- Magnetic resonance images (MRIs) are quite accurate in differentiating chronic impingement from tears of the rotator cuff and should be employed when
    - A surgical approach is being considered, and
    - The diagnosis is unclear, and
    - The clinical examination is limited
- MR arthrograms are accurate in diagnosing labral tears.
- X-rays: special views of AC joint, with weights in hand for AC separation
- Diagnostic ultrasound is an option.
- If indicated by imaging, and no improvement from initial conservative therapy, refer for aggressive treatment at three months.

Aggressive Treatment (10% of cases)
[Benchmark cost: $2,621]

- Include imaging as above.
- Dislocation: After reduction, the first and second dislocations of the shoulder are treated nonsurgically except in unusual circumstances. An initial dislocation should generally be treated with three or more weeks of immobilization in a sling and swathe. This is followed by a progressive exercise program to strengthen the muscles of the shoulder girdle and, thus, reduce the probability of recurrent dislocations. A second dislocation may be treated in a sling until asymptomatic. After a third dislocation, further dislocations may be presumed to be imminent, and orthopedic referral for consideration of a surgical repair is appropriate.
- Arthroscopy, Shoulder, Surgical: Rotator cuff repair, with decompression of subacromial space with partial acromioplasty, with or without coracoacromial release. Performed by Orthopedic Surgeon (90%) or General Surgeon (10%) on an outpatient or 23-hour basis. May be endoscopic. Decompression/acromioplasty alone should be performed after at least six weeks of conservative treatment.
- Clavicle (collarbone) fractures are common injuries, and they can occur different ways. Some patients fall on an outstretched hand, others fall and hit the outside of their shoulder. Treatment of clavicle fractures most commonly involves resting the affected extremity in a sling. It is unusual for a clavicle fracture to require surgery, but surgery is required in some situations when either the skin is broken or if the fracture is severely displaced or shortened
- Post-surgical treatment:
    - Physical/Occupational Therapy: A short course may be needed; if so then post-surgical treatment (endoscopic): 14 visits over 8 weeks; post-surgical treatment (open): 20 visits over 10 weeks

ODG Return-To-Work Pathways

Arthroscopic surgical repair/acromioplasty (stage 3), clerical/modified work: 28-56 days

Arthroscopic surgical repair/acromioplasty, manual work, non-dominant arm: 56-90 days

Arthroscopic surgical repair/acromioplasty, manual work, dominant arm: 70-90 days

Open surgery (stage 3), clerical/modified work: 42-56 days

Open surgery, manual work, non-dominant arm: 70-90 days

Open surgery, manual work, dominant arm: 90-106 days

Open surgery, heavy manual work if cause of disability: indefinite

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

During the comprehensive medical literature review, preference was given to high quality systematic reviews, meta-analyses, and clinical trials over the past ten years, plus existing nationally recognized treatment guidelines from the leading specialty societies.

The type of evidence associated with each recommended or considered intervention or procedure is ranked in the guideline's annotated reference summaries.

Ranking by Type of Evidence:

1. Systematic Review/Meta-Analysis
2. Controlled Trial-Randomized (RCT) or Controlled
3. Cohort Study-Prospective or Retrospective
4. Case Control Series
5. Unstructured Review
6. Nationally Recognized Treatment Guideline (from www.guideline.gov)
7. State Treatment Guideline
8. Foreign Treatment Guideline
9. Textbook
10. Conference Proceedings/Presentation Slides

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

These guidelines unite evidence-based protocols for medical treatment with normative expectations for disability duration. They also bridge the interests of the many professional groups involved in diagnosing and treating work-related shoulder conditions.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The Treatment Protocol sections outline the most common pathways to recovery, but there is no single approach that is right for every patient and these protocols do not mention every treatment that may be recommended. See the Procedure

Summaries (in the original guideline document) for complete lists of the various options that may be available, along with links to the medical evidence.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2003 (revised 2006)

GUIDELINE DEVELOPER(S)

Work Loss Data Institute - Public For Profit Organization

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary.

GUIDELINE AVAILABILITY

Electronic copies of the updated guideline: Available to subscribers from the Work Loss Data Institute Web site.

Print copies: Available from the Work Loss Data Institute, 169 Saxony Road, Suite 210, Encinitas, CA 92024; Phone: 800-488-5548, 760-753-9992, Fax: 760-753-9995; www.worklossdata.com.

AVAILABILITY OF COMPANION DOCUMENTS

Background information on the development of the Official Disability Guidelines of the Work Loss Data Institute is available from the Work Loss Data Institute Web site.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on February 2, 2004. The information was verified by the guideline developer on February 13, 2004. This NGC summary was updated by ECRI on March 29, 2005, January 18, 2006, and on April 13, 2006.

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